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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,984	12/05/2003	Masanori Takebe	042715-5007	7239

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EXAMINER	
AN, SANG WOOK	
ART UNIT	**PAPER NUMBER**
1732	

DATE MAILED: 02/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/727,984	TAKEBE ET AL.	
	Examiner	Art Unit	
	Sang W. An	1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

2. Claims 1, 2, and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiho et al (US 4440820) in view of Katori (US 6180048).

Regarding claim 1, Shiho et al teach a method of double color-molding a key top (abstract), comprising the steps of: performing a first shot for injection-molding with a first resin an outer part that forms an outer line (col 2 lines 51-55, fig 4A, **11**) of a closed loop in a letter, figure, mark, or the like (col 1 lines 50-52), and an inner portion that forms an inner line of said closed loop (col 2 lines 51-55, fig 4A, **15**), performing a gate-cut of an injection gate for the resin in both said outer potion and said inner pad (col 5 line 34, although the gates are not shown in the figure, it is inherent that gate cut of the first resin would be required before injecting the second resin), and performing a second shot for injection-molding a second resin layer that contacts a front surface of each of said outer part and said inner part (col 2 lines 55-69, fig 4C) in such a manner that the second resin layer covers a gate trace on both said outer part and said inner part, which remains after said gate-cut.

However, Shiho et al does not teach using light-shielding nor light-permeable polymer. Nevertheless, Katori does teach using both the light-shielding and light-permeable polymers in a process for making a key top. Katori teaches an intermediate opaque polymer layer that is light shielding (col 2 lines 34-42, fig 1, **3**). Underneath the intermediate layer, Katori teaches a transparent polymer layer (col 2 lines 24-33, fig 1, **2**). Therefore, it would have been obvious to one of ordinary skill in the art at the time of

invention to use Katori's teaching in Shiho et al's method of making a key top in order to illuminate the key top with a back light (col 1 lines 49-54).

Regarding claim 2, Shiho et al teach a method of double color-molding a key top (abstract) comprises the steps of: closing an upper metal mold (fig 1, **8**) for a first shot including a plurality of gate holes (col 5 line 34, although the gates are not shown in the figure, it is inherent that the mold would inherently have to contain gate through which resin could be supplied), which are arranged so that they are connected to a cavity, for injecting a first resin into an outer part that forms an outer line of a closed loop (col 2 lines 51-55, fig 4A, **11**) in a letter, figure, mark, or the like (col 1 lines 50-52), and into an inner part that forms an inner line of said closed loop (col 2 lines 51-55, fig 4A, **15**), and a lower metal mold having a core (fig 1, **15**), which includes a convex portion that corresponds to a planer shape of said closed loop (fig 1, grooves or protrusion on top of mold, **15**); performing a first shot for injecting a first resin through said plurality of gate holes into a space remaining between said cavity of said upper metal mold and said core of said lower metal mold to injection-mold said inner part and said outer part (fig 4A), opening said upper metal mold for a first shot and said lower metal mold, performing a gate cut of an injection gate for the first resin in both said outer part and said inner pad (col 5 line 34, although the gates are not shown in the figure, it is inherent that gate cut of the first resin would be required before injecting the second resin), changing said upper metal mold for a first shot to an upper metal mold for a second shot (fig 4B), closing said upper metal mold for a second shot and said lower metal mold, and performing a second shot for injecting light-permeable resin into a

space remaining between a cavity of said upper metal mold for a second shot and said lower metal mold to injection-mold a second resin layer (fig 4C) in such a manner that it covers a gate trace in both of said inner part and said outer part, which remains after said gate-cut.

However, Shiho et al does not teach using light-shielding nor light-permeable polymer. Nevertheless, Katori does teach using both the light-shielding and light-permeable polymers in a process for making a key top. Katori teaches an intermediate opaque polymer layer that is light shielding (col 2 lines 34-42, fig 1 **3**). Underneath the intermediate layer, Katori teaches a transparent polymer layer (col 2 lines 24-33, fig 1 **2**). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use Katori's teaching in Shiho et al's method of making a key top in order to illuminate the key top with a back light (col 1 lines 49-54).

Regarding claim 3, Shiho et al teaches a method of double color-molding a key top, wherein the height of a convex portion formed on the core of said upper metal mold for a first shot is approximately half of a thickness of said inner part or said outer part (figure 4A).

3. Claims 4/1, 4/2, and 4/3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiho et al (US 4440820) in view of Katori (US 6180048) further in view of Motegi (US20030107554).

Shiho et al in view of Katori teach every limitations of claims 1-3 but does not teach limitations of claim 4. Nevertheless, Motegi teaches a method of double color-molding a key top, wherein the light-permeable resin layer is a light-permeable

chromatic resin layer that selectively allows a wavelength of a back light through (par 0035 and par 0023). Therefore it would have been obvious to one of ordinary skill in the art to use Motegi's teaching in Katori in Shiho et al in view of Katori's method of manufacturing a key top in order to create a more variety of design.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang W. An whose telephone number is (571) 272-1997. The examiner can normally be reached on Mon-Fri 7 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sang Wook An
Patent Examiner
Art Unit 1732

January 19, 2006

MICHAEL P. COLAIANNI
SUPERVISORY PATENT EXAMINER